AMENDMENTS TO THE CLAIMS

1. (currently amended) A composition comprising:

a nucleic acid that binds to ~~a blood clot or to a protein that is a component of a mammalian blood clotting cascade~~thrombin; and

a protein attached to said nucleic acid at either the 5' end or the 3' end or both wherein said protein is streptavidin or a variant of streptavidin that retains biotin binding activity.

2. (previously presented) The composition of claim 1, wherein said nucleic acid is derivatized at the 5' or 3' end or at both the 5' and 3' ends with a reagent specific for binding to said protein thereby forming a complex between said reagent and said protein.

3. (original) The composition of claim 2, further comprising a linker that covalently attaches said protein to said nucleic acid or said reagent to said nucleic acid.

4. (previously presented) The composition of claim 2, wherein said reagent is biotin.

5. (previously presented) The composition of claim 3, wherein said reagent is biotin that is covalently attached to a linker.

6. (canceled)

7. (canceled)

8. (currently amended) The composition of claim ~~6~~ any one of claims 1-5 wherein said composition is further labeled with a radioactive label.

9. (original) The composition of claim 8, wherein said radioactive label is ^{123}I, ^{124}I, ^{125}I, ^{131}I, ^{99m}Tc, ^{186}Re, ^{188}Re, ^{64}Cu, ^{67}Cu, ^{212}Bi, ^{67}Ga, ^{90}Y, ^{111}In, ^{18}F, ^{3}H, ^{14}C, ^{35}S or ^{32}P.

10. (original) A method for imaging blood clots *in vivo* comprising intravenously administering to a subject the composition of claim 8 and imaging the emission from said radioactive label.

11. (currently amended) A method for preventing coagulation of blood in a subject requiring anticoagulation treatment comprising intravenously administering an amount of the composition of claim ~~6~~8 effective to inhibit coagulation to said subject.

12. (canceled)

13. (previously presented) A method for inhibiting degradation of a nucleic acid in the blood comprising attaching streptavidin or a variant thereof that retains biotin binding activity to said nucleic acid at the 5' or 3' end or at both the 5' and 3' ends.

14. (currently amended) The method of claim 13, wherein said nucleic acid is derivatized with biotin and the streptavidin or variant thereof binds to the biotin.

15. (previously presented) The method of claim 13 wherein said nucleic acid is DNA, 2'-fluoropyrimidine RNA or 2'-aminopyrimidine RNA.

16. (currently amended) A composition comprising:

a nucleic acid, that is derivatized at the 5′ or 3′ end or at both the 5′ and 3′ ends with ~~a protein~~ streptavidin or a variant of streptavidin that retains biotin binding activity~~having a half-life in serum of greater than 1.0 hours~~, that specifically binds to ~~a blood clot or to a protein that is a component of a mammalian blood clotting cascade~~thrombin, wherein said nucleic acid is 2′-fluoropyrimidine RNA or 2′-aminopyrimidine RNA.

17. (canceled)

18. (currently amended) The composition of claim 16 wherein the wherein said nucleic acid is derivatized at the 5' or 3' end or at both the 5' and 3' ends with a reagent specific for binding to said ~~protein~~ streptavidin or variant thereof thereby forming a complex between said reagent and said ~~protein~~streptavidin or variant thereof.

19. (previously presented) The composition of claim 18, further comprising a linker that covalently attaches said reagent to said nucleic acid.

20. (previously presented) The composition of claim 19, wherein said reagent is biotin that is covalently attached to said linker.

21. (canceled).

22. (previously presented) The composition of claim 16, wherein said protein is covalently attached to said nucleic acid through a linker.

23. (previously presented) The composition of claim 16, wherein said nucleic acid is less than 50 nucleotides long.

24. (previously presented) The composition of claim 16, wherein said composition is further labeled with a radioactive label.

25. (previously presented) The composition of claim 24, wherein said radioactive label is ^{123}I, ^{124}I, ^{125}I, ^{131}I, ^{99m}Tc, ^{186}Re, ^{188}Re, ^{64}Cu, ^{67}Cu, ^{212}Bi, ^{213}Bi, ^{67}Ga, ^{90}Y, ^{111}In, ^{18}F, ^{3}H, ^{14}C, ^{35}S or ^{32}P.

26. (previously presented) A method for imaging blood clots *in vivo* comprising intravenously administering to a subject the composition of claim 24 and imaging the emission from said radioactive label.

27. (previously presented) A method for preventing coagulation of blood in a subject requiring anticoagulation treatment comprising intravenously administering an amount of the composition of claim 16 effective to inhibit coagulation to said subject.

28. (previously presented) The composition of claim 1, wherein the nucleic acid comprises nucleotides having the sequence of SEQ ID NO: 1 or SEQ ID NO: 2.

29. (previously presented) The composition of claim 16, wherein the nucleic acid comprises nucleotides having the RNA sequence corresponding to SEQ ID NO: 1 or SEQ ID NO: 2.

30. (canceled)

31. (canceled)

32. (new) A composition comprising:

a nucleic acid that specifically binds to thrombin; and

a protein attached to said nucleic acid at either the 5' end or the 3' end or both wherein said protein is streptavidin or a variant of streptavidin that retains biotin binding activity;

wherein the nucleic acid is obtained by a selection process comprising:

i) providing a pool of polynucleotides each comprising a randomized sequence between segments of constant sequence;

ii) contacting the pool of polynucleotides with thrombin in a binding solution to obtain polynucleotide:thrombin complexes and unbound polynucleotides;

iii) separating polynucleotide:thrombin complexes from unbound polynucleotides; and

iv) isolating the polynucleotides of the polynucleotide:thrombin complexes.

33. (new) The composition of claim 32, wherein the process of obtaining the nucleic acid further comprises:

v) amplifying the polynucleotides isolated from the polynucleotide:thrombin complexes and

vi) repeating the selection process using a binding solution during the contacting step ii) so that a higher affinity of the nucleic acid for the target protein is required to form a polynucleotide:thrombin complex.

34. (new) The composition of claim 33, wherein in step vi) the selection process is repeated using a binding solution during the contacting step ii) having an increased salt concentration.

35. (new) The method of claim 33, in which the amplifying step v) is performed by at least one polymerase chain reaction.

36. (new) The method of claim 32, in which the isolating step iv) comprises cloning of the polynucleotides.

37. (new) The composition of claim 1 or claim 16, wherein the nucleic acid component comprises a nucleotide sequence that forms a guanine quartet.

38. (new) The composition of claim 1 or claim 16, wherein the nucleic acid component comprises residues 1-6 of SEQ ID NO. 1 linked to the 5' end of residues 10-16 of SEQ ID NO. 1 by a sequence of three nucleotides.